**Classroom Debate Activity**

**Chemistry (SCH3U)**

Debate in the classroom can be used as a way to facilitate research and discussion of

an issue in the curriculum. The recipients will benefit from developing public speaking skills, critical thinking skills, research skills and teamwork skills. It provides challenge of learning to be resourceful thinkers who can synthesize ideas and quickly articulate them.

**Specific Expectation:**

B1.1 Analyze, on the basis of research, the properties of a commonly used but potentially harmful chemical substance (e.g., fertilizer, pesticide, a household cleaning product, materials used in electronics and batteries) and how that substance

affects the environment, and propose ways to lessen the harmfulness of the substance (e.g., by reducing the amount used, by modifying one of its chemical components) or identify alternative substances that could be used for the same purpose.

**Topic for the debate:**

“Phosphorus is an important component of plants and animals. Phosphates are also used as food additives, and as components in some medicines. In addition, they are an important part of dishwasher and laundry detergents. In the 1960s, the phosphate pollution arrived in the Lake Erie. Should we continue using phosphates, or not?”

**Organize the teams**:

* The class into three groups: one affirmative team, the other opposing team, and the third who are judgingthe quality of the evidence and arguments and the performance in the debate.
* The affirmative and opposing teams will consist of three members each, while the judging team will include the teacher, with a small group of students.
* In addition to the three specific groups, there may an audience made up of class members not involved in the formal debate.

**Instructions to the students:**

Students will be allowed to do the research work at the school library by working individually and preparing their arguments. They may divide tasks between the team’s members in finding arguments, preparing and performing presentation and finding evidences for their arguments. Students must find different sources of supporting information for your topic. During the debate, students may use diagrams, slides, videos etc. After the research is completed, the students will be asked together to work as a group to collaborate their research work. They should anticipate counter arguments and prepare rebuttals. Each of the views should be supported with reliable facts. The rules for the debate are to be followed at all times, otherwise the participants will be disqualified.

**Prepare room for debate**:

* When it comes to the structure of the classroom, it is a good tactic to arrange chairs and tables so the positioning of each debating side is made clear.
* The teacher will allocate 2 students – one as a timekeeper and the other as a moderator.

**During the debate**:

* Establish the rules of the debate, including timelines.
* Students will be informed about how they will be assessed.
* Give students in the 'audience' a blank rubric. Explain that it is their job to judge the debate objectively.
* Begin the debate with the pro side speaking first. Allow them 5-7 minutes of uninterrupted time to explain their position. All the members must participate equally.
* Repeat the previous step for the con side.
* Give both sides about three minutes to confer and prepare for their rebuttal.

Members of the audience should be given an opportunity to ask questions and to contribute their own thoughts and opinions on the arguments presented. Members of the debate teams may also wish to reflect on their performance and seek feedback from the audience, including the teacher.

**Decision of Winner (on the basis of the scores on the rubric):**

The winning team is based only on the quality of delivery and not based on personal agreement of the subject. The winner team will be judged by the teacher and the peers involved in judgment.

For deciding the winner team, 40% of the marks from the peer judges and 60% of the marks from the teacher will be taken into account.

**Assessment Rubric**:

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| --- | --- | --- | --- | --- |
| Category | Level 4 | Level 3 | Level 2 | Level 1 |
| Knowledge and understanding of the topic and its content | Demonstrates knowledge and understanding of the topic with a high degree of effectiveness | Demonstrates knowledge and understanding of the topic with a considerable degree of effectiveness | Demonstrates knowledge and understanding of the topic with some effectiveness | Demonstrates knowledge and understanding of the topic with limited effectiveness |
| Communication  Delivery and clarity of ideas | Conveys ideas logically, clearly and convincingly, with a high degree of effectiveness | Conveys ideas logically, clearly and convincingly, with a considerable degree of effectiveness | Conveys ideas logically, clearly and convincingly, with some effectiveness | Conveys ideas logically, clearly and convincingly, with limited effectiveness |
| Inquiry/investigation  Producing evidence and rebuttaling  (challenge to opponents and response to questions) | Contributes substantially and meaningfully to support the arguments.  Substantial and meaningful preparation for opponents’ points and rebuttals | Contributes meaningfully to support the arguments.  Considerable preparation for opponents’ points and rebuttals | Contributes in some way to support the arguments.  Some preparation for opponents’ points and rebuttals | Contributes in a limited way to support the arguments.  Limited preparation for opponents’ points and rebuttals |
| Application  Making connections of science and technology to environment and its constituents | Applies knowledge to STSE with a high degree of effectiveness | Applies knowledge to STSE with a considerable degree of effectiveness | Applies knowledge to STSE with some effectiveness | Applies knowledge to STSE with  limited effectiveness |